

**BUREAU OF HIGHWAYS
REQUEST FOR PROPOSAL
for
QUALIFICATION BASED SELECTION FOR PREQUALIFIED SERVICES**

The Michigan Department of Transportation (MDOT) is seeking professional services for the project contained in the attached scope of services.

If your firm is currently prequalified for this type of work and you are interested in providing services, please indicate your interest by submitting a Proposal. The Proposal must be submitted in accordance with the latest "Vendor Selection Guidelines for Service Contracts", available on the MDOT website.

For efficiency sake, we are asking that the vendor firm provide 6 paper copies of the Proposal to the MDOT project manager named in the attached scope of services.

These copies must be received by 4 p.m. on April 20, 2005. Fax and electronic copies are not acceptable.

In addition, provide one unbound copy to:

Regular Mail:

Secretary, Operations Contract Support
Michigan Department of Transportation
P.O. Box 30050
Lansing, MI 48909

OR

Overnight Mail:

Secretary, Operations Contract Support
Michigan Department of Transportation
425 W. Ottawa
Lansing, MI 48933

This copy is to be received within three working days after the due date and time specified above. Please do not deliver in person.

Any questions relative to the scope of services must be submitted by e-mail to the MDOT project manager. Any questions must be asked at least three working days prior to the due date and time specified above. All questions and their answers will be placed on the MDOT website as soon as possible after receipt of the questions. The names of vendors submitting questions will not be disclosed.

For a cost plus fixed fee contract, the selected vendor must have a cost accounting system to support a cost plus fixed fee contract. This type of system has a job-order cost accounting system for the recording and accumulation of costs incurred under its contracts. Each project is assigned a job

number so that costs may be segregated and accumulated in the vendor's job-order accounting system.

The selection team will review the information submitted and will select the firm considered most qualified to perform the engineering services based on the proposals. The selected vendor will be contacted to confirm capacity. Upon confirmation, that firm will be asked to prepare a priced proposal. Negotiations will be conducted with the firm selected.

The maximum allowable pages for your proposal shall follow the guidelines detailed in Exhibit F of the Vendor Selection Guidelines (October 2004) for \$25,000/\$100,000.

MDOT is an equal opportunity employer and MDOT DBE firms are encouraged to apply. The participating DBE firm, as currently certified by MDOT's Office of Equal Opportunity, shall be listed in the Proposal.

The scope of services is attached to this solicitation.

**MICHIGAN DEPARTMENT OF TRANSPORTATION
TRAFFIC AND SAFETY DIVISION**

**SCOPE OF WORK FOR SIGNAL DESIGN MODERNIZATION ,
GENESEE COUNTY, BAY REGION CMAQ PROJECT**

PROJECT LOCATION: M-21 Corridor, Genesee County
CONTROL SECTION, JOB NUMBER: CS 25032 & 25081----JN 83161C

DESCRIPTION OF WORK: Signal Modernization & Radio Interconnect Design for Four Signalized Intersections & Interconnect Design only for Six Signalized Intersections, City of Flint, Flint Township & Clayton Township, Genesee County. **QAQC is required and will be used (rated) as one of the criteria for selection process on this project.**

I Primary Prequalification Classification:

Traffic Signal Design

II Secondary Prequalification Classification:

NA

III Project Manager

Paula Corlett, P.E.
Engineer Manager
Traffic Signal Unit
Traffic and Safety Support Area
Michigan Department of transportation
Murray D. Van Wagoner Building
P.O. Box 30050
Lansing, MI 48909
517-373-2324
517-373-2330
E-mail: corlettp@michigan.gov

The anticipated start date of the service is 05-06-05

The anticipated completion date for the service is 07-18-05.

DBE Requirement: NA

Project Names/Location:

- 1) M-21 (Corunna) at Morrish Road, Clayton Township, Genesee County (25081-01-17)
Radio Interconnect Design & Verify the Existence of Loops (if not, add loops)
- 2) M-21 (Corunna) at Elms Road, Clayton Township, Genesee County (25081-01-022)
Radio Interconnect Design & Add Loops
- 3) M-21 (Corunna) at Dye Road, Flint Township, Genesee County (25081-01-012)
Radio Interconnect Design
- 4) M-21 (Corunna) at Linden Road, Flint Township, Genesee County (25081-01-023)
Radio Interconnect Design
- 5) M-21 (Corunna) at Mansour, Home Depot Drive, Flint Township, Genesee County (25081-01-013)
Radio Interconnect Design & Verify the Existence of Loops (if not, add loops)
- 6) M-21 (Corunna) at Dutcher Road, Flint Township, Genesee County (25081-01-009)
Radio Interconnect Design
- 7) M-21 (Corunna) at Graham Road, Flint Township, Genesee County (25081-01-010)
Full Modernization & Radio Interconnect Design
- 8) M-21 (Corunna) at Ballenger Highway, City of Flint, Genesee County (25081-01-001)
Full Modernization & Radio Interconnect Design
- 9) I75, US23 Northbound Off Ramp at M21 (Corunna), Flint Township, Genesee County (25032-01-001)
Full Modernization & Radio Interconnect Design
- 10) I75, US23 Southbound Off Ramp at M21 (Corunna), Flint Township, Genesee County (25032-01-101)
Full Modernization & Radio Interconnect Design

Control Sections
25032 & 25081

Job No.
83161C

Final Plan Completion Date
7-18-05

Description of Services/Scope of Work:

The subject ten signalized intersections are to be designed as part of the Genesee County, Bay Region CMAQ project. Four locations will require **full Modernization & Radio Interconnect design** and the remaining six locations will require **Radio Interconnect Design only**. This project consists of the design for **upgrading of the existing** traffic signal equipments including but not limited to traffic signal controllers ("EPAC" type controllers), traffic and pedestrian heads, Pedestrian push button actuated (**if necessary**), embedded loop and/or camera design (**if necessary**), illumination case signs , span wire, signal support poles and supporting structures (**if necessary**). Replace all **existing** traffic and pedestrian signal heads crossing all legs with 12" heads. **Also, design for Radio Interconnect System along the M21 corridor which includes the installation of a Master controller along the route. Exact location of Master Controller will be determined during the RADIO SURVEY. The signal design should incorporate the use of LED technology.**

The existing drawing and Layout Request Forms for all the ten intersections will be provided to the consultant at the kick off meeting.

Utility coordination for this project will be done by MDOT staff and design consultant should incorporate all the utility information received into the design plans. The consultant is responsible for scheduling a kick off meeting for this project and notifies the MDOT staff of the date.

These signals will be installed under the signal construction contract (JN 83161A). The designer shall arrange for an on-site design meeting with Genesee County personnel, City of Flint Traffic personnel, the Region Electrician (Scott Holzeih), MDOT Signal, TSC Traffic & Safety Engineer (Wendy Cloutier), and Davison TSC Utility Coordinator (Keith Brown) to review the proposed signal modernization design plan.

General Requirements:

Design and develop traffic signal contract plans, proposal package, engineering documents, and related work necessary for new installation or modernization of electronic traffic signal control devices to be accomplished by contract bid letting. New traffic signal work typically includes installation of: signal support poles and/or pedestals, span wire, traffic and pedestrian signals, and traffic signal controller. Modernization traffic signal work typically includes the replacement, as needed, of: signal support poles and/or pedestals, span wire (if appropriate), traffic and pedestrian signals, traffic loops, handholes, and traffic signal control equipment.

If further investigation determines that **steel poles** are required for a location, soil borings need to be taken.

If it is determined during construction, the design **is not constructible** due to consultant design error; the signal design consultant will be responsible for correcting the design at no additional cost to MDOT. If the constructability is based on changes made by MDOT, the consultant will be compensated.

Justification for Use of Consultant:

This project was reviewed and scheduled to be included in the 2005 FY Call-for-Projects. This work load is beyond the staff time available within the unit. Pre-qualified traffic signal design professional services are required to meet the commitment to execute this project for this fiscal year and obligate the funds available.

Specific Requirements:

1. Perform design service including the design and preparation of preliminary plans, final plans, proposal package, specifications, wiring diagrams, interconnect circuit numbers, bills of materials, measurement and payment items, and cost estimates for all construction work for this project, including necessary alterations to power, lighting, and interconnect facilities
2. Perform Design Service for drilled shaft foundations including soil boring information, identification of any suspected contamination of the boring site, and preliminary foundation

investigation. (Refer to MDOT's website.) The following information must be provided for proper analysis of strain pole foundations:

- Accurate pole location information
 - Soil classification
 - Standard penetration values every 2.5 feet (750 mm) extending 20 feet (6.1 m) below the ground surface elevation
 - Ground water table elevation
3. The Consultant shall contact the Region Materials/Testing Engineer or Soils Engineer before proceeding with any geotechnical work and submit the results of the preliminary subsurface investigation for their review, approval, and recommendations for foundation design.
 4. In the performance of design service, govern all project design and plan work by the applicable codes, standards, and practices of the Michigan Department of Transportation, hereinafter referred to as the department, and the current *Michigan Manual of Uniform Traffic Control Devices*.
 5. The Consultant shall provide design service for the project locations which are grouped by individual construction contracts on either a region wide, citywide, or countywide basis as shown in Attachment "A1."
 6. Supply all materials necessary for completion of the projects, except as hereinafter described, including incidental blueprints required.
 7. All documents prepared by the Consultant, including tracings, drawings, estimates, specifications, field notes, investigation studies, etc., are the property of the department.
 8. All plan sheets shall be developed using computer-aided drafting technology. The system shall be Intergraph Microstation, or one that processes data exactly as Intergraph will, no translations or system revisions being necessary by the department.
 9. Refer to Suggested Traffic Signal Design Procedure: MDOT website.
 10. Refer to Requirements for Preliminary Geotechnical Investigations for Signal Foundations: MDOT website.
 11. Plans are to be designed using the 2003 Standard Specifications.

Work Program:

Task 1: Preliminary Plan Preparation

1. Make all necessary field investigations and studies of all existing overhead and underground facilities.
 - a. For installation of any support structures (poles or pedestals) by the Contractor, contact Miss Dig, telephone 800-482-7171 and have them mark all underground utilities in each

quadrant of the intersection. This must be done at least two working days in advance of need. The color codes for utility locating in the field are as follows:

- Red - Electric
 - Orange - Telephone, Cablevision
 - Yellow - Gas, Oil
 - Blue - Water
 - Brown - Sewer System
 - Green - Storm Drains
- b. Show marked underground utilities on the plans with each specifically identified for use by the Contractor.
 - c. If at this point, due to right-of-way and/or underground utilities, placement of a supporting structure is still in question, contact the Traffic and Safety Division, Traffic Control Devices Unit in Lansing, phone number 517-373-2323.
2. Design and develop traffic signal contract preliminary plans, engineering documents, and related work necessary for new installation or modernization of electronic traffic signal control devices to be accomplished by contract bid letting. New traffic signal work typically includes installation of: signal support poles and/or pedestals, span wire, traffic and pedestrian signals, and traffic signal controller. Modernization traffic signal work typically includes replacement, as needed, of: signal support poles and/or pedestals, span wire (if appropriate), traffic and pedestrian signals, traffic loops, handholes, and traffic signal control equipment.

Task Product:

1. Seven sets of preliminary plans on paper (construction details included) which contain the following:
 - (a) Condition diagram to nearest one foot (305 mm), scale: 1" = 30' (1:400)
 - (b) All known overhead and underground utilities in the vicinity of the intersection.
 - (c) All pertinent operational features, i.e., lane line, lane usage, street width, etc.
 - (d) Signal phasing diagram(s) as required
 - (e) Proposed traffic signal removal (if required) and installation plan(s)
 - (f) Proposed traffic signal removal wiring diagram (if required) and wiring diagram(s)
 - (g) List of Materials and Quantities
 - (h) Span calculation diagram(s)
 - (i) Appropriate note blocks for contact persons, etc.
 - (j) Proper file names, levels, and text sizes
 - (k) Soil boring information including depths, soil description, water level, and depth of foundation (if required)
2. Seven copies of draft special provisions and specifications and checklists of both MDOT Special Provisions and "typical" signal details to be used.
3. The plan sets and proposal packages are to be distributed as follows:

Traffic Signals Unit – 2 sets
TSC Resident Engineer – 1 set
TSC Traffic & Safety Engineer – 1 set
TSC Utilities Engineer – 1 set
Region Traffic & Safety Engineer – 1 set
Construction & Technology – 1 set
Maintaining Agency (if applicable) – 1 set

Department Review:

The Consultant will also submit an electronic version of the plans (via electronic mail) and preliminary plans, draft special provisions, and specifications. The department will review and return one set of the plans, special provisions, and specifications with comments. Additional plan review may be required dependent on completeness and accuracy of the initial preliminary plan submitted. MDOT will expedite their review process dependent on availability of staff.

Task 2: Final Plan Preparation

1. Incorporate the department's comments on the plans and prepare complete detailed construction final plans, supplemental specifications, special provisions, measurement and payment items, estimates of quantities, span calculations, and engineer's final estimates of cost for all necessary construction and related work included in this project.
2. During preparation of the final plans, make such alterations, corrections, and revisions to said plans and supporting materials as are deemed necessary and desirable by the department to insure conformance of plans to good design and standard practices and to have said plans and other material in proper form for receiving bids.

Task Product and Final Deliverables:

1. Upon completion of design services for this project and final approval thereof by the department, deliver to the department the following:
 - a. One set of final construction plans which meet current department standards concerning: the use of ink or pencil, scale of drawing, and type of reproducible drawing material used.
 - b. One set of supplemental specifications typewritten on 82" x 11" paper (213 mm x 275 mm).
 - c. One set of estimates of cost of construction, typewritten on 82" x 11" paper (213 mm x 275 mm).
 - d. One copy of all design computations and layout sheets as required for use by the department.
 - e. Upon request by the department, make available thereto all notes utilized in preparation of the plans, supplemental specifications, and cost estimates.
 - f. One copy on a 32" (88 mm) disk and/or one electronic copy of all production drawings in Intergraph Microstation file format. Refer to MDOT website.
 - g. A title sheet showing a map of the area with work locations identified, a list of locations, title blocks, and other items as determined by Traffic Signal Unit.

- h. For all signal contracts, a "txt" or "csv" file compatible with Transport system detailing the materials used.

Information Services to be provided by the Department:

- Control section numbers
 - Job numbers
 - Contact information for TSC/Region/C&T personnel
 - Appropriate Traffic and Safety Notes
 - Available signal design plans and/or layout drawings for each location
 - Available signal phasing or operational information for each location
 - **Items available on MDOT's website - www.michigan.gov/mdot**
(Select: Doing Business with MDOT, Traffic & Safety Services, Typical/Details/Guides)
1. Signal Details
 - a. MDOT Typical Signal Construction Detail Sheets
 - b. MDOT Typical Signal Information Note Sheet
 - c. MDOT Typical Signal Legend Sheet
 2. Traffic Consultant Files
 - a. Cell libraries
 - b. Microstation information
 - c. CAD instructions for consultants
 - d. MDOT sample layouts
 - e. MDOT Suggested Traffic Signal Design Procedure
 - f. MDOT Requirements for Preliminary Geotechnical Investigations for Signal Foundations
 - g. Method of Measurement and Basis of Payment for Signal Contracts
 - h. Signal Span Calculation Program (non-disclosure statement required)
 3. Traffic Guidelines
 - Traffic Signal Head Placement DiagramsSignal special provisions are now available on the Design IRS menu.

Reference Documents and Standards to be Used:

- *National Manual of Uniform Traffic Control Devices*
- *Michigan Manual of Uniform Traffic Control Devices (MMUTCD)*
- *Michigan Vehicle Code*
- Local and national electrical codes
- MDOT Standards, Specifications, and Construction Details
- MDOT Pay Item Code Book

From this list, the following documents can be ordered from MDOT Financial Services Division (517-335-2519). The Consultant must pay the cost.

- MMUTCD

- MDOT 2003 Standard Specifications for Construction
- MDOT Pay Item Code Book

Project Coordination:

Coordinate design service with MDOT, Traffic and Safety Division, Traffic Control Devices Unit (517-373-2323); overhead and/or underground utility/telephone companies; Miss Dig (800-482-7171).

Project Schedule:

Prepare and submit to the department a Gantt Chart schedule for each task and total calendar days for completing the project. The work shall be completed commencing from the date of work authorization to the Consultant. The time allocated for any necessary utility coordination meeting, soil boring investigations, and the department review shall be shown in the Consultant's work schedule.

VENDOR PAYMENT:

All invoices/bills for services must be directed to the Department and follow the 'then current' guidelines. The latest copy of the "Professional Engineering Service Reimbursement Guidelines for Bureau of Highways" is available on MDOT's Bulletin Board System. This document contains instructions and forms that must be followed and used for invoicing/billing; payment may be delayed or decreased if the instructions are not followed.

Payment to the Vendor for Services rendered shall not exceed the "Cost Plus Fixed Fee Not to Exceed Maximum Amount" unless an increase is approved in accordance with the contract with the Vendor. All invoices/bills must be submitted within 14 calendar days of the last date of services being performed for that invoice.

Direct expenses will not be paid in excess of that allowed by the Department for its own employees. Supporting documentation must be submitted, with the invoice/bill, for all billable expenses on the Project. The only hours that will be considered allowable charges for this contract are those that are directly attributable to the CE activities of this Project. Hours spent in administrative, clerical, or accounting roles for billing and support, are not considered allowable hours; there will be no reimbursement for these hours.

Reimbursement for overtime hours will be limited to time spent on this project in excess of forty hours per week. Any variations to this rule should be included in the price proposal

The fixed fee for this service shall be 11.0%.

